

Appl. No. : 10/634,211
Filed : August 5, 2003

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Withdrawn).
2. (New) A blood pump including: a housing; at least partially hydrodynamically suspended impeller; wherein said impeller is located within said housing and includes a plurality of magnets and wherein each said magnet is arranged within a circular zone which is generally near to the maximum radius of the said impeller.
3. (New) The pump of claim 2, wherein said impeller includes vanes.
4. (New) The pump of claim 3, wherein said vanes form spaced apart fluid passages or channels.
5. (New) The pump of claim 3, wherein said vanes are generally shark fin shaped.
6. (New) The pump of claim 3, wherein said vanes are generally tear dropped shaped.
7. (New) The pump of claim 3, wherein said vanes are generally arcuate in shape.
8. (New) The pump of claim 3, wherein said impeller includes an axis of rotation and each said vane generally extends from a point near to the axis of rotation and extends angularly away from the axis of rotation.
9. (New) The pump of claim 3, wherein each said vane increases in width or thickness as said vane extends in a direction away from the axis of rotation.
10. (New) The pump of claim 3, wherein each said vane includes at least one magnet disposed within the blade.

11. (New) A blood pump including: a housing; at least partially hydrodynamically suspended impeller; wherein said impeller is located within said housing and includes a plurality of magnets and said impeller includes at least one blade; wherein each said blade includes a relatively thick end and an opposed relatively thin end.

12. (New) The pump of claim 11, wherein said thick end of each blade includes at least one magnet disposed within the blade.

13. (New) A blood pump including: a housing; at least partially hydrodynamically suspended impeller; wherein said impeller is located within said housing and includes a plurality of magnets; wherein said impeller is magnetically urged, in use, by an axial motor formed by a plurality of stator coils cooperating with said magnets.

14. (New) A blood pump including: a housing; at least partially hydrodynamically suspended impeller; wherein said impeller is located within said housing and includes a plurality of magnets and wherein each said magnet is arranged within a circular zone which is generally near to the maximum radius of the said impeller.

15. (New) The pump of claim 14, wherein said impeller includes vanes.

16. (New) The pump of claim 15, wherein said vanes form spaced apart fluid passages or channels.

17. (New) The pump of claim 15, wherein said vanes are generally shark fin shaped.

18. (New) The pump of claim 15, wherein said vanes are generally tear dropped shaped.

19. (New) The pump of claim 15, wherein said vanes are generally arcuate in shape.

20. (New) The pump of claim 15, wherein said impeller includes an axis of rotation and each said vane generally extends from a point near to the axis of rotation and extends angularly away from the axis of rotation.

21. (New) The pump of claim 15, wherein each said vane increases in width or thickness as said vane extends in a direction away from the axis of rotation.

22. (New) The pump of claim 21, wherein each said vane includes at least one magnet disposed within the blade.

23. (New) A rotary blood pump including: a pump housing, wherein said housing includes an inlet and an outlet; an impeller, wherein said impeller rotatably arranged within said housing and said impeller, when in use, is urged to rotate by an electric motor; said electric motor, which includes a plurality of electric coils mounted on, in or about said housing and a plurality of magnets included within the impeller, wherein said impeller includes hydrodynamic lifting surfaces.

24. (New) The pump of claim 23, wherein said hydrodynamic lifting surfaces are positioned on at least a bottom surface of the impeller.

25. (New) The pump of claim 23, wherein said hydrodynamic lifting surfaces are positioned on at least an upper surface of the impeller.

26. (New) The pump of claim 23, wherein said impeller includes at least three blades.

27. (New) The pump of claim 23, wherein said blades are of generally triangular configuration, wherein the blade width increases with increasing radius and wherein the blades have a convex outer surface on the circular border of a supporting body.